edition version 1.2

NEW

BlueLine

High Performance Line

HPL KW series

FREEZELAB

New Touch Screen

7” TFT Display

Freezelab HPL Line

Green ICE

KW Antibacteria

APPARECCHI SCIENTIFICI

KW

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Freezelab
HPL LINE
(High Performance Line)

(TT) TOUCH TECNOLOGY

KW is always very innovative and gets inspiration by the news from informatics, electronics and thermodynamics.
KW has thought a controller with a technology based on micro processor ARM9, the same processor applied in smart-phones. It's name is **i-KW**.
I-KW works with operative system Linux and it's a true on–board computer. The new controller has a graphic interface, done with a touch screen **TFT DISPLAY.**
KW slogan is: ***let's put an iPad in our apparatus!***
This controller, not only is equipped with a more powerful processor and with much capacity of memory RAM, if compared to the previous models, it has an user interface so direct, that anyone will find it really user-friendly.

CONNECTIVITY, TRACEABILITY AND TOTAL SAFETY

Guarantying the maximum connectivity and traceability, i-KW is able to satisfy the requirements of the pharmaceutical industry and health laboratories, completely.
The low temperature freezers HPL, with the new smart controller i-KW, **can have a full connectivity with the laboratory environmental, by means of: slot USB, slot SIM, Wi-Fi, Ethernet wired.**

Above all, the Wi-Fi connection will make the HPL freezer visible in the LAN of the hospital or of the industrial laboratory.
From a PC workstation, connected in the same network as the freezer, through the browser, you can connect with the refrigeration unit by typing the IP address of the same.
Or, from any Internet terminal in the world will be able to connect to the refrigeration unit accessing the static IP address of the company, whose network is connected in the freezer, of course having the login credentials, which may be granted by the administrator corporate network.
The controller also warrants a full traceability, since the system continuously records , at high frequency, the functional data, bar codes, or other forms of coding, combining them with the freezing or cryo preservation process, etc. The user, without needing any specific SW, will be able to transfer the data to PC and/or to LAN in a very friendly way thanks to the standards which are developed in compliance with Windows. The smart controller i-KW has been designed to guarantee an integrated safety about all the functions, through the regulation and the management of the refrigeration power. The data recording complies with the most evolved standards, like GMP, JACIE, FACT, and so on. **There is also the availability of a temperature – time graphic, with no need to install a specific recorder.**

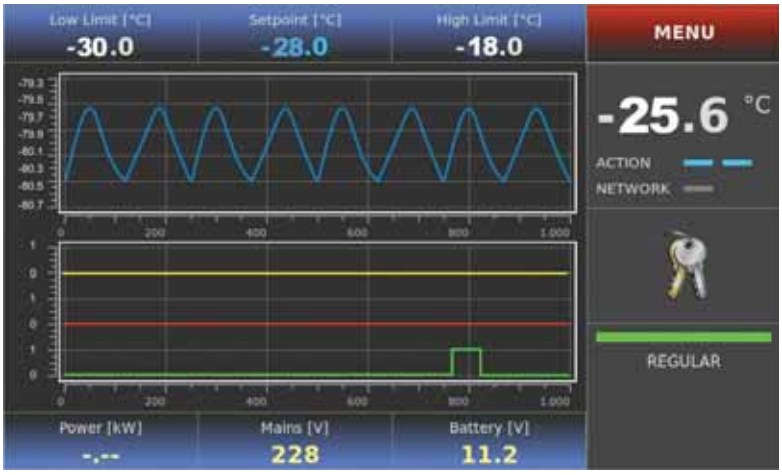
Freezelab
HPL LINE *(High Performance Line)*

THE INNOVATION OF HUMAN INTERFACE

A true challenge to the common sense for dimensions, structure and possible information. I-KW is the new reference for the user interface and for the connectivity attached to the control of the temperature freezers, where a simple, intuitive and nice to see interface is combined with a sophisticated management of the refrigeration unit.

- Recording of the functional variables on SD card, in real time
- Menu sensitive to the fingering (touch) with many windows and with temperature graphics
- USB interface on the front panel to download the temperature recording and updating (SW-FW)
- Possibility of door opening, in safety (password) through touch button or transponder
- Italian, English, French, Spanish, German languages available

Badge KW



Instant termperature and alarm graphs and door opening

THE ACCESS CONTROL AND THE AIDED MAINTENANCE

The HPL freezelab, equipped with the new i-KW controller, have a controlled access: it comes as standard the possibility to use an electronic key (alphanumerical code customized by the user) to put together with an electrical lock for a controlled door opening, or, as optional equipment, to use a badge or transponder (or finger pass, with the finger print storage).
The new i-KW controller guarantees high use simplicity and an easy maintenance. The user will be able to arrange many tools which will teach him how to use them.

Think to the possibility to have a user guide on display and to scroll it as if it was a smart phone; and therefore to enjoy immediately an user manual, a start up sequence, or video files, which show the maintenance activities and so on.
Through the possibility for the manufacturer or the service engineer to connect by an IP address, and by a sequence of passwords (safety and traceability) to ask questions to the freezer status, or to modify the parameters, the freezer management can also happen from remote, with low costs and in very short time, with undoubted advantages for the failures preventing.
It will be possible to activate a telecare, with the mailing of instructions and recommendations on display, activating GSM function, by the slot for SIM.

Freezelab

HPL LINE (High Performance Line)

The new controller assures safer procedures, automatic recording of the data and shorter working time for the technician.
In fact it obtains the maximum saving for the procedures of freezing, storage, by the automatic writing of the introduced items, by the automatic recording of materials and thermal cycle, and their association. In this way it obtains to amend many errors and many not conformities of the laboratory processes, and in last analysis it gives a sensible saving of the indirect costs.
The control and recording of all the functional parameters, by the computer memory, guarantees a very high operative efficiency, allowing the measurements of the energy consumpation and the actuation of the parameters useful for COP rising together with Green Ice project.
The user can display also the recording of electrical consumpation.
New functions and an arrangement to future updating

INTERACTIVE ENERGY SAVING

About energy saving, the smart controller i-KW has new functions:

ECO MODE allows raising the temperature set during the night hours with a pre-definite value (settable by the user or by the manufacturer)

ENERGY SAVING, allows, when the percentage of the compressor use reaches a pre definite value, to raise the temperature set point, temporarily and automatically, with a pre definite value (settable by the user or by the manufacturer). The restore, at the pre definite conditions, happens automatically.
These two new functions allow to integrate themselves to those offered by NIA system and to aid the energy saving and the reduction of the global warming, with a smaller not direct CO2 emission in the atmosphere. **The energy saving is at least -15%, in comparison with a standard low freezer.**
Besides, the new controller is equipped to accept future updating easily and at low costs, so it'll be able to adapt itself to the new technological innovations and to response to the raising requirements from the rules and the directives in pharmaceutical and health filed.
Smart controller i-KW is the last stage of the art for the control system of the low temperature freezers.

User panel

- SERIES KBPF VERTICAL (-20°C / -40°C)

STRUCTURE:

Single-body structure with external in white pre-enamelled steel-sheets **and internal AISI 304 stainless steel sheets with a shiny finish and rounded internal angles; insulation with high-density (40 Kg/mc.) polyurethane foamed on site CFC- and HCFC-free, 90 MM. THICKNESS;**
Standard equipment includes a pressure-compensation valve to facilitate the operation of opening the door.
The freezer comes with pivoting wheels (optional in version at -30 °C KFS) to facilitate transportation and placement inside the laboratory.
KW offers a lifetime warranty on the steel portion of the structure.
Reversible DOOR with magnetic gaskets, automatic closing and key lock; 2 counter doors insulated by means of high-density (thickness of 20 mm.) polyurethane foam: optional in version at -30 °C (KFS), standard at -40 °C (KBPF-PP).
Internal grilled shelves (n= 5) with adjustable height. - Dimensions for each shelf 53(l)x65(p) cm.
TWO Reversible DOORS with magnetic gaskets, automatic closing and key lock (on all doors); 2 counter doors insulated by means of high-density (thickness of 20 mm.) polyurethane foam: optional in version at -30 °C (KFS, standard at -40 °C (KBPF-PP).
This solution allows: -separating samples with different movement characteristics.
It is advisable to use the lower compartment for long-term conservation; you can manage both compartments in an autonomous and independent fashion, since both come with lock and key;
Internal grilled shelves (n=5) with adjustable height. Dimensions for each shelf 53(l)x65(p) cm.
All the series with NO DEFROSTING = Energy saving + Better T. Stability

REFRIGERATION:

Ventilated refrigeration: this is because of the large volume in the work chamber, but there are minimal T differences in the internal space = max. uniformity of the temperature parameter.
The refrigeration system is fully sealed; it uses a circuit with innovative components (copper coils connected to the external walls of the internal chamber) and fluids to obtain, together, maximum cooling reliability and performance; the KBPF600X-PP (-40°C) version has a airtight 1.7 HP compressor with high refrigerating capacity and low noise (value Leq dB (A) < 55). (R507 refrigerant)
Both versions have a large storage capacity and are adaptable to elevated temperature loads; in particular, version PP allows giving an adequate response to broad variations in temperature loads in order to guarantee -40 °C.
It has extensive air condensation surfaces to compensate even the harshest environmental and work conditions. Both versions guarantee low levels of consumption and noise. The afore mentioned systems do not require defrost, so they work with minimal T fluctuations in time = max. stability of the temperature parameter and they save a lot of energy.

- MODEL K220V VERTICAL SERIES KW FRIG (-20°C / -40°C)

STRUCTURE AND REFRIGERATION:

External body in white pre-enamelled steel-sheets
- Internal casing in thermoformed ABS, smooth and with rounded edges for maximum cleaning
- High ergonomics with modelled handles and height, ideal for use
- Thickness of insulation **80 mm.**, with polyurethane foamed on site
- Evaporation with coils connected to the external walls of the inner case for an excellent cooling effect on stored products
- Drawers, with the objective of minimizing cold loss during material insertion/removal operations, to achieve minimal power consumption.
- Condenser with compressor cooled by axial fans for maximum reliability
- Very low noise • HFC R404A environmentally-friendly refrigerant; expansion via capillary tubes

- SERIES ELITE VERTICAL (KFE 600 and KFS 600) (-20°C / -30°C)

STRUCTURE:

Single-body structure with internal and external white pre-enamelled or plasticized steel-sheets, or AISI 304 stainless steel with shiny finish and rounded internal angles for maximum hygiene and cleanliness; adjustable support feet in stainless steel; **insulation** with high-density (40 Kg/mc.) **polyurethane foamed on site**, CFC- and HCFC-free, with a thickness of 60 mm; reversible doors with magnetic gaskets and automatic closing with key lock; internal grilled shelves with adjustable height; possibility of using counter doors (optional, upon request)

REFRIGERATION:

With evaporating coil on the side and bottom walls of the internal casing; without the need to defrost and therefore minimum T fluctuations in time and gives big energy saving.

Internal ventilation to make sure internal T uniformity is the best possible; this facilitates both the pull down and recovery phases. Completely sealed refrigerating system with airtight compressor and air condensation; guaranteed low power consumption and noise. All the other technical features are the same of KBPF series.

- SERIES KFDE VERTICAL (KFDE 520) (-20°C / -30°C)

STRUCTURE:

The external structure is made of a cabinet with rounded profile in white enamelled steel sheets, and reversible door with magnetic gaskets and key lock. The door handle has an internal opening mechanism that allows manoeuvring with minimum effort on the part of the user. The cabinet comes with support feet on the front and small pivoting wheels on the back, in order to facilitate transportation and placement inside the laboratory.

The internal compartment is in white plastic material: non-abrasive ABS with completely rounded edges to facilitate cleaning. Average insulation thickness about 80 mm, with highly environmentally-friendly polyurethane resin foamed on site. This, together with the use of drawers, guarantees optimum capability against thermal dispersion, resulting in really low power consumption. The drawers, in plastic materials, close the space between an evaporation tray and the other, preventing the escape of cold every time the user opens the freezer counter doors and offering the best organization for the storage of biological products.

Evaporation trays subtract heat from the materials in storage in a fast, direct fashion, and without the need for defrosting, guaranteeing maximum stability and uniformity in conservation temperature: thus, they contribute to increase the quality of laboratory activities wherever they are installed.

REFRIGERATION:

The refrigeration technology uses evaporation trays; they subtract heat from the materials in storage in a fast, direct fashion, and thus there is no need for defrosting. The solution guarantees maximum stability in the conservation temperature in addition to good (T) uniformity. There is no need to defrost after a while.

- SERIES KFCE HORIZONTAL (KFCE 460) (-20°C / -45°C)

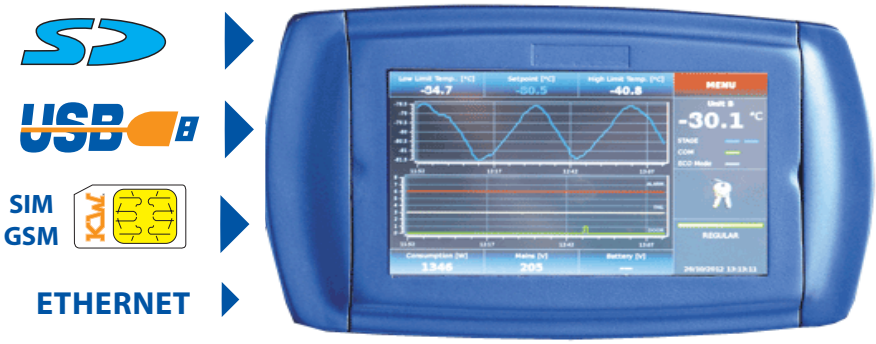
STRUCTURE AND REFRIGERATION:

KW offers this new series, featured by a wide range of volumes and a well-type structure characterized by an exceptional 100-mm. insulation thickness. This allows long preservation times in case of blackout. The fully sealed execution of the refrigerating circuit and the use of airtight compressors make these freezers a very silent and reliable option, even in critical environmental conditions.

The external STRUCTURE is made of white-enamelled steel sheets treated with epoxy resin and a rounded profile, internal aluminium casing , with the exception of model KFCE600, which is in AISI 304. Super insulation with a thickness of 100 mm (with the exception of model KFCE600) in CFC- and HCFC-free foamed polyurethane; this guarantees:
- long duration for the preservation of frozen biological material in case of power interruptions
- very reduced power consumption
Airtight compressor and evaporator attached to the outside of the tank.
The series comes with key lock, internal lighting, and a device to send hot air outside to take out any humidity that may have gotten inside, which prevents the formation of frost and allows opening the door repeatedly without effort.

Display to set and to read the temperature:

i–KW video – graphic interface is a color touch screen display 7" TFT; micro processor ARM9 technology , the same processor used in the smart phones, which functions with Linux operative system; menu sensitive to the fingering with many windows and with temperature graphics; system available in 5 languages: Italian, English, German, French, Spanish.
- Controller startup and shutdown: access protected by electronic key with password



Display	TFT Touch screen 7.0" wide
Power supply	from Power Board
Dimensions	197x122x50 mm
Front ports	USB - Slot per SIM Card e SD Card
Ports	Ethernet
Slot	for modem GSM
CPU	Atmel® at91 sam9261 256 Mb flash Operating System Linux 2.6.33

CONTROL SYSTEM: control, recording, supervision, full traceability of all the parameters and the events , full connectivity to the environmental, very high safety about the operations and the accesses. **2-ch monitoring kit with two independent RTD Pt 100 Ω (class A) sensors**; one for the regulation and one for the temperature alarm and for automatic recording of the temperature and the alarms; recording in real time of all the functional variables on SD card and on USB port; this last part on the front panel to download data of thermal recording and for updating; registration in SQL format for easy reading by dedicated software **KWCRC TRACER**; **Pb or Ni-MH backup battery; and battery recharge circuit.**
- Set point and alarm limits change: controlled change through an electronic key, with password against violations, accidental handlings, and for the best traceability.
- Access to the menu, with sensible data and parameters: controlled access to SW parameters, by electronic key, for the maximum security and in compliance with laboratory rules and standard.
- All data are continously recorded on SD card and on USB Port.

ALARMS: temperature alarm system fully independent with the regulation control; **reading of alarm probe by 2nd micro processor on the electronic board**: visual and acoustic alarm for power failure, door opening, high condenser pressure, battery alarm, damaged probe/s, compressors time, high temperature condenser, clogged condenser; for any temperature alarm, automatic recording (high T, low T) black out, critical alarm temperature, month/day/hour/minute of the alarm start; month/day/hour/minute of the alarm end.

- Door opening: n° daily openings, n° critical openings, total opening time are all recorded in the memory

List of the monitored failures: damage of T probe, compressor time, dirty condenser, high condenser T, power failure, thermal protection, damaged plant probe

- Safety control: the freezer continues to run a timed thermo stabilization with compressor on/off times collected before the sensor(s) broke down.

Disaster recovery: in the event the CPU is destroyed, it allows cycling the functions on the remote unit, with the exception of data visualization, that is, the freezer continues working with average on/off times recorded before the failure.

Info test: executes functional tests for the biological freezer, with report printing if necessary, without engaging external devices.

Enviromental adaptability: the condenser vents are managed separately by means of a sensor; **condenser fan speed modulation within a band of temperatures.**

Energy saving, activating the under mentioned functions, it's possible save over 15% energy in respect of the freezer with standard controllers – **GREEN ICE SOLUTIONS**; economic management of the consumptions

- **ECO MODE**: during the night, when the user procedures and stored product so permit it is possible to raise the set temperature by a predefined value, thereby obtaining important energy savings.
- **ENERGY SAVING** this reduces the consumption rates of the refrigerating unit as soon as the compressor use percentage reaches a predefined value. In this condition, the operating set point is temporarily and automatically increased by a value preset by the user; resetting takes place automatically at the defined conditions.

48 Hours!!

Up to 48 hours of temperature data logging

on SD CARD in case of energy black out

The control system uses 8 AA Ni-MH rechargeable batteries

GSM: optional, every i-KW, can have a GSM form, becoming an independent unit, which transmits and receives SMS on own phone number, towards the recorded users;

RS 485 Modbus RTU: is present – standard- a RS485 port with Modbus RTU protocol, oriented to the serial communication of i-KW towards systems of supervision, compatible with this protocol;

Bar code reader: optional; for the registered samples equipped with a bar code;

Dry contacts: remote management of the alarm signals;

Human interface: user guide on display; files (also video) with maintenance programs on display; maintenance KW program: informs about periodic operations recommended for the maximum reliability of the freezer and for the minimum energy consumption;

Recording (standard): with data logger function and the possibility to display the temperature - time graphic on display touch screen;

ETHERNET PEER TO PEER WIRED: by a configuration of PPP type, many i-KW controllers can be connected in a same network. This configuration allows the supervision per single address IP from PC in the network , by a browser with the display of the HTML pages, pre installed in every single terminal;

WI-FI: through the WI-FI form, optional, the i-KW units can be connected in wireless network , in the environmental where an access point is present (Router WI-FI) or **through router connected directly;**

Ethernet or WIFI connectivity

TOTAL CONNECTIVITY
TOTAL TRACEABILITY
CONTROLLED ACCESS

7”TFT DISPLAY

KBPF 600 PP HPL

TOTAL CONNECTIVITY
TOTAL TRACEABILITY
CONTROLLED ACCESS

BlueLine

series Freezelab -20°C -45°C

HPL

(High Performance Line)

FREEZELAB FREEZER				
	Series ELITE Vertical		Series Frig.KDE Vert.	Series Frig.KDF Vert.
HORIZONTAL MODELS HPL-40°C	KFE 600	KFS 600	KFDE 520	K 220 V
External dimensions (WxDxH)	cm67x87x195	cm67x87x195	cm72x75x191	cm60x63x188
Internal dimensions (WxDxH)	cm55x75x145	cm55x75x145	cm59x68x140	cm51x57x144
Set Point	-25°C	-30°C	-30°C	-40°C
Working range	-18°C/-25°C	-20°C/-30°C	-18°C/-30°C	-20°C/-45°C
Capacity (litres)	600	600	520	220
Pre painted steel closed doors	1	1	1	1
Shelves/baskets	5/0	5/0	7 /14	6/6
Weight Kg	140	150	103	90
Internal surfaces standard	Coated steel white	Coated steel white	ABS thermo moulded	ABS thermo moulded
External surfaces standard	Coated steel white	Coated steel white	Coated steel white	Coated steel white
Insulation thickness	60mm	60mm	80mm	80mm
Key Lock	ST	ST	ST	ST
Small rollers/wheels + stabilizing feets	ST	ST	ST	ST
(*) Controller HPL (display Touch Screen, Smart defrost, HT, LT, BLACK OUT, failure list, door open, switching on/off password, alarm memory, alarm test,				
Controller HPL (*)	ST	ST	ST	ST
PT100 probe (A class)	ST	ST	ST	ST
RS485, USB Port and SD Card	ST	ST	ST	ST
None defrosting	ST	ST	ST	ST
AVAILABLE ACCESSORIES				
External surface inox	√	√	NO	NO
Internal surface inox	√	√	NO	NO
N.° aluminium drawers (DRAL)	√(7)	√(7)	NO	NO
N.° plastic drawers (DRAP)	NO	NO	ST	ST
Additional shelves	√	√	NO	NO
Opening door by transponder personal key	√	√	NO	NO
Electrical key	√	√	√	√
Temperature recorder	√	√	√	√
Printer (Strip Chart)	√	√	√	√
Internal - external hole	√	√	√	√
GSM Port	√	√	√	√
2 ch PT100 (control probe, alarm probe)	ST	ST	ST	ST
Additional PT100 probe (free contacts for external data management system)	√	√	√	√
Data logger wireless+software/hardware (temperature management Spy KW)	√	√	√	√
IQ/QQ/ecc.	√	√	√	√
SPLIT	√	√	NO	NO
Voltage stabilizer ± 35V (±15%)	NO	NO	NO	NO
Water condenser	NO	NO	NO	NO

√	OPTIONAL
ST	STANDARD
NO	Not Available

BlueLine

series Freezelab -20°C -45°C

HPL

(High Performance Line)

FREEZELAB FREEZER					
Series KBPF Vertical		Series KBPF-PP Vertical		Series Frig.KFCE Horizontal	
KFS 600S	KFS 600S 2D	KBPF 600 PP	KBPF 600 PP 2D	KFCE 460	K 460C
cm76x95x210	cm76x95x210	cm76x95x210	cm76x95x210	cm165x76x92	cm165x76x92
cm57x73x151	cm57x73x151	cm57x73x151	cm57x73x151	cm144x51x67	cm144x51x67
-30°C	-30°C	-40°C	-40°C	-30°C	-40°C
-20°C/-30°C	-20°C/-30°C	-30°C/-45°C	-30°C/-45°C	-18°C/-30°C	-20°C/-45°C
600	600	600	600	460	441
1	2	1	2	1	1
5 or more	5 or more	5 or more	5 or more	5 baskets	5 baskets
160	170	190	200	90	90
AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	AISI 304 stainless sheet	Laminated aluminum	Laminated aluminum
Coated steel white	Coated steel white	Coated steel white	Coated steel white	Coated steel white	Coated steel white
90mm	90mm	90mm	90mm	100mm	100mm
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST
SAFETY CONTROL, DISASTER RECOVERY, key alarm test, USB port, WI.FI, Ethernet wired)					
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	ST	ST
ST	ST	ST	ST	NO	NO
√	√	√	√	NO	NO
√(7)	√(7)	√(7)	√(7)	NO	NO
NO	NO	NO	NO	NO	NO
√	√	√	√	NO	NO
√	√	√	√	NO	NO
√	√	√	√	√	√
√	√	√	√	√	√
√	√	√	√	√	√
√	√	√	√	√	√
√	√	√			
ST	ST	ST	ST	ST	ST
√	√	√	√	√	√
√	√	√	√	√	√
√	√	√	√	√	√
NO	NO	√	√	NO	√
NO	NO	√	√	NO	NO
NO	NO	√	√	NO	NO

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This catalogue is on an informative and illustrative basis, the quality of the images and the contents may have come under alterations during printing

= min./max temperature alarm

= Internal light

= DATA LOGGER function

= energy failure alarm

= Alarm broken down probe

= Open door alarm

= Lock

= Disaster Ricovery / Safety Control

= Temperature recorder

= Wheels

Cold storage equipment

Incubation and microbiological test equipment

Ovens, drying and sterilizing equipment

Maintenance, IQ,OQ,PQ, hardware and software for equipment management

Medical devices for transfusion centres

APPARECCHI SCIENTIFICI KW®

ISO 9001:2008 ISO 13485:2003 ISO 14001:2004 OHSAS 18001 2007

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